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|-----------------|-------------|----------------------|---------------------|------------------|
| 09/761,573      | 01/18/2001  | David Michael Bains  | 13DV13120           | 4682             |

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EXAMINER

KIM, CHONG HWA

ART UNIT PAPER NUMBER

3682

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/761,573 | <b>Applicant(s)</b><br>BAINS ET AL. |  |
|                              | <b>Examiner</b><br>Chong H. Kim      | <b>Art Unit</b><br>3682             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-9,11-24,26-28,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-20 is/are allowed.
- 6) ☒ Claim(s) 1-5,7-9,11,21-24,26-28,30 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Aug 6, 2004 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21-24, 26-28, 30, and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly amended claim 21 includes the limitation, "the means for determining the weight of contaminants filtered in said first filter during said check run". Such limitation is considered a new subject matter that is not described in the specification as originally filed. The specification appears to indicate that the first filter is taken out of the fluid line so that it can be weighed to determine the contaminant level. If the filter is taken out to be

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measured, then how can there be a means for determining the weight of contaminants filtered in the filter during the **check run**? (emphasis added).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 4 recite the limitation, "said step of weighing said primary filter", in lines 2 and 3, respectively. It is indefinite because claim 1 recites two different steps involving the weighing of the primary filter and it is not known which step the above limitation refers to.

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 7-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damm et al., U.S. Patent 6,457,564 B1 in view of Sakai et al., JP 410170504A.

Damm et al. shows, in Fig. 1, a method for performing a clean check on a gearbox 3, the method comprising the steps of;

filtering an oil based fluid in a preliminary filter 8;

flushing the oil-based fluid through the gearbox and then through a primary filter 24;

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determining the quality of the lubricant in the system (since it is inherent that filter is changed periodically);

wherein the gearbox is a finally assembled, closed gearbox;

but fails to show the determining steps that involve comparing the weight of the filter before and after; the filters being 3 micron collection filter; the oil being MIL-L-23699 oil; and flushing 50 gallons of oil at about 40 pounds per square inch.

Sakai et al. shows, in the Abstract, a system and a method of performing a clean check, the method comprising the steps of;

flushing an oil-based fluid through the refrigerator and then through a filter 12;

weighing the filter to determine the weight of contaminants collected in the filter;

comparing the contaminant weight to a predetermined level, wherein the apparatus is acceptable if the contaminant weight is below the predetermined level; and

wherein the steps are repeated if the contaminant weight is above the predetermined level (inherent).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the oil quality determining method as disclosed by Damm et al. with the contaminants weight determining method as taught by Sakai et al. in order to provide a more accurate and convenient way of measuring, as described in the Abstract of Sakai et al., so that the system is provided with longer life expectancy.

As to the matter of the filters being 3 micron collection filter and the oil being MIL-L-23699 oil, it would have been obvious to provide the filter and the oil type of Damm et al. with a 3 micron collection filter and MIL-L-23699 oil, since such a modification would have involved a

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mere change in the material used in the system for performing a clean check on the gearbox. A selection of known material based on its suitability for the intended use is generally recognized as being within the level of ordinary skill in the art. In re Leshin, 125 USPQ 416.

As to the matter of flushing 50 gallons of oil at about 40 pounds per square inch, it would have been obvious to apply the steps involving flushing 50 gallons of oil at about 40 pounds per square inch in Damm et al. since it has generally been recognized that the specific flushing step involves optimization through routine experimentation, In re Boesch, 205 USPQ 215 (CCPA 1980); In re Svala, 70 USPQ 412 (CCPA 1946); or discovery of optimum ranges within prior art general conditions, In re Aller et al., 105 USPQ 233.

As to the matter of the step of weighing the primary filter before flushing the oil therethrough, the teaching of Sakai et al. concerning the contaminants level determining method would inherently incorporate the step of weighing the primary filter before the flushing of the fluid therethrough since Sakai et al. deals with the determination of the contaminants level by weight difference of the filter prior to and after the check run.

8. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damm et al. in view of Sakai et al. as applied to claim 1 above, and further in view of Kodaira et al., JP Patent 09089638 A.

Damm et al. in view of Sakai et al. shows, as discussed above in the rejection of claim 1, the method for performing a clean check on a gearbox including the steps of weighing the filter and comparing the contaminant weight, but fails to show the step of soaking the filter in a solvent prior to the step of weighing the filter; soaking for 30 minutes or more; the steps of soaking the filter in a first solvent prior to the step of weighing the filter and then soaking the

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filter in a second solvent; and the first solvent being mineral spirits and the second solvent being isopropyl alcohol.

Kodaira et al. teaches, in the Abstract, a method of measuring residual quantity of machining oil comprising a step of soaking a device in a solvent prior to a measurement of a filter in which contaminants in oil are obtained.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of performing a clean check on a gearbox of Damm et al. in view of Sakai et al. by adding the step of soaking a device in a solvent prior the step of measuring as taught by Kodaira et al. in order to provide a more accurate means of targeted measurement so that the cost involved in maintenance can be reduced.

As to the matter of the step of soaking for 30 minutes or more, it would have been obvious to apply the steps involving soaking the filter in the solvent for 30 minutes or more in Kodaira et al. in view of Sakai et al., since it has generally been recognized that the duration in which the filter can be soaked involves optimization through routine experimentation, In re Boesch, 205 USPQ 215 (CCPA 1980); In re Svala, 70 USPQ 412 (CCPA 1946); or discovery of optimum ranges within prior art general conditions, In re Aller et al., 105 USPQ 233.

As to the matter of the steps of soaking the filter in a second solvent after first solvent, it would have been obvious to provide a second solvent to further extract contaminants in the filter of Damm, since such a modification would have involved a mere addition of a solvent that functions essentially the same as the first solvent used in the system for performing a clean check on the gearbox. A duplication of parts is generally recognized as being within the level of ordinary skill in the art. In re Harza, 124 USPQ 378.

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As to the matter of the solvent being mineral spirits or isopropyl alcohol, it would have been obvious to make the solvent of Kodaira et al. mineral spirits or isopropyl alcohol, since such a modification would have involved a mere selection of the material used in the system for performing a clean check on the gearbox. A selection of known material based on its suitability for the intended use is generally recognized as being within the level of ordinary skill in the art. In re Leshin, 125 USPQ 416. Furthermore, it would have been obvious to modify the solvent of Kodaira et al. with mineral spirits or isopropyl alcohol, since applicant has not disclosed that the solvent being specifically mineral spirits or isopropyl alcohol solves any stated problem or is for any particular purpose other than just dissolving the oil and the contaminants, and it appears that the soaking of the filter in a solvent to dissolve the oil and the contaminants therein would perform equally well with any other known solvents that dissolve the oil and the contaminants.

***Allowable Subject Matter***

9. Claims 12-20 are allowed.

***Response to Arguments***

10. In response to the applicant's argument that neither prior art, Damm et al. nor Sakai et al. show a system for performing a clean check on a gearbox after final assembly, it is the Examiner's view that both devices of Damm et al. and Sakai et al. contemplate a clean check on a machines after final assembly. Clearly, Damm et al. in view of Sakai et al. deals with cleaning and measuring the contaminant level in a completed system, not a system that is half way assembled or anything close to that nature.



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11. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In the case of the Damm et al. in view of Sakai et al. rejection, the motivation is found in the reference of Sakai et al., in the Abstract. The motivation would be "to enhance the accuracy and the convenience of such a measuring apparatus that quantitatively evaluates a contaminant dissolved in...oil" as stated in the Abstract. Furthermore, In the case of the Damm et al. in view of Sakai et al. and in further view of Kodaira et al. rejection, the motivation is found in the knowledge generally available to one of ordinary skill in the art. It is obvious that weighing the dirty filter without taking out the used fluid would result in inaccurate measurement of the true contaminant level. Without the accurate measurement, the necessary maintenance would be either missed or performed unnecessarily causing the cost of maintenance to increase.

12. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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13. In response to applicant's argument concerning inherency issue, Sakai et al. discloses a measuring apparatus for contaminant in oil by quantitatively evaluating the contaminant in the oil on the basis of a change in the weight of the filter before and after. It must be agreed and understood that in the art of measurement, the inherent purpose of measurement is to "compare". If there is no "predetermined value" to compare the measurement with, then the purpose for the measuring apparatus would be meaningless and worthless. It is inherent that the contaminant information is used for improving the mechanical system and/or the maintenance method or for simply to maintain. Either improvements or simple maintenance requires some sort of "predetermined value" (preferably determined by the designer) to compare the new and old values so that one of ordinary skill in the art may know what is the acceptable contaminant level. Therefore, the limitation that compares the contaminant weight to a predetermined level to determine the contaminant level acceptability, as recited in claim 1, is inherently shown by Sakai et al.

14. In response to the applicant's argument that weighing a filter to determine the level of contaminant is not analogous to determining the quality of the lubricant, it is the Examiner's intention to show that Damm et al. teaches means for controlling the contaminant in the system, mainly by the filters that are provided in the system. Therefore, such provision determines the quality of the lubricant. And, such practice is analogous to the determining method as recited in claim 1.

15. In response to applicant's argument that Damm et al, Sakai et al., and Kodaira et al. are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which

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the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, all of the references is at least reasonably pertinent to the particular problem with which the applicant was concerned, mainly the method of checking for contaminant level in fluid. Damm et al. in view of Sakai et al. certainly teaches such method (the basis for such position is discussed at length in above paragraphs, thus will not be expounded in this section). Kodaira et al. deals with means to accurately measure the contaminant level wherein the oil having contaminant (residual) is dissolved in a solvent before the contaminant level is measured. Such steps as taught by Kodaira et al. certainly would be relied thereupon by any person of ordinary skill in the art to apply to the contaminant level measuring method as taught by Damm et al. in view of Sakai et al.

16. Applicant's arguments with respect to claims 21-24, 26-28, 30, and 31 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chong H. Kim whose telephone number is (703) 305-0922. The examiner can normally be reached on Tuesday - Friday; 8:00 - 6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

chk

January 21, 2005

  
CHONG H. KIM  
PRIMARY EXAMINER